Cisco Model DPC3825 8x4 DOCSIS 3.0 Wireless Residential Gateway

The Cisco® Model DPC3825 8x4 DOCSIS 3.0 Wireless Residential Gateway (DPC3825) is a high-performance home gateway that combines a cable modem, router and wireless access point in a single device providing a cost-effective voice and networking solution for both the home and small office. The DPC3825 provides a faster connection to the Internet by incorporating eight bonded downstream channels along with four bonded upstream channels. These bonded channels can deliver downstream data rates in excess of 340 Mbps and upstream data rates in excess of 120 Mbps. That's up to eight times faster downloads than conventional single-channel DOCSIS® 2.0 cable modems.[1]

The DPC3825 is designed to meet DOCSIS 3.0 specifications, as well as offering backward compatibility for operation in DOCSIS 2.0, 1.1, and 1.0 networks.

Figure 1. Cisco Model DPC3825 8x4 DOCSIS 3.0 Wireless Residential Gateway (image may vary from actual product and specification)

Designed for the active digital home or office, the DPC3825 integrated router features a Dynamic Host Configuration Protocol (DHCP) server, Network Address and Port Translation (NAT/NAPT) and a Stateful Packet Inspection (SPI) firewall. These features allow the user to share a single high-speed public Internet connection as well as share files and folders between devices within the home network by attaching multiple wired and wireless devices in your home or office to the wireless residential gateway.

[1] Channel Bonded cable modems must be used in conjunction with CMTSs that support Channel Bonded bonding per the DOCSIS 3.0 specifications. When used with non-Channel Bonded CMTSs, Channel Bonded cable modems function as conventional DOCSIS 2.0 cable modems.

Consumer-friendly features like Wireless Protected Setup (WPS) and user-configured Parental Control can protect the home network from unwelcome intruders and family members from access to undesirable websites.

Features

DOCSIS

- Compliant with DOCSIS 3.0, 2.0, 1.1, and 1.0 standards to deliver high-end performance and reliability

Connections

- Four 1000/100/10BASE-T Ethernet ports to provide wired connectivity
- High-performance broadband Internet connectivity to energize your online experience
- 802.11n, 2x2 Wireless Access Point (WAP) with four Service Set Identifiers (SSIDs)
- WPS, including a push-button switch to activate WPS for simplified and secure wireless setup
- USB 2.0 Type 1 host port (factory option)

Design and Function

- User-friendly web GUI with simplified navigation and quick setup feature
- Context-sensitive pop-up Help for each configuration page
- DOCSIS-5 compliant LED labeling and behavior provides a user- and technician-friendly method to check operational status and act as a troubleshooting tool
- Attractive, compact design and versatile orientation to stand vertically, lie flat on the desktop or shelf, or mount easily on a wall
- TR-068 compliant color-coded interface ports and corresponding cables simplify installation and setup

Management

- Allows automatic software upgrades by your service provider
- Provisonable via DOCSIS config file, SNMP, and/or XML

Security

- User-configurable Parental Control blocks access to undesirable Internet sites
- Advanced firewall technology deters hackers and protects the home network from unauthorized access

Software and Documentation

- CD-ROM containing user guide

Figure 1. Cisco Model DPC3825 Front Panel (image may vary from actual product and specification)

Table 1. Front Panel Features

Feature	Description
Indicators	Power, DS, US, Online, Ethernet, USB, Wireless Link, Wireless Setup
Color	Black, black lens, silver text
Branding	Cisco and model number

Figure 2. Cisco Model DPC3825 Back Panel (image may vary from actual product and specification)

Table 2. Back Panel Features

Feature	Description
POWER Connector Color: Black	Connects the wireless home gateway to the DC output of the AC power adapter
POWER SWITCH (not shown)	Power switch provided for product shipping to the EU and, when appropriate, to comply with regulatory requirements
MAC ADDRESS LABEL	Displays the MAC address of the cable modem
USB Color: Blue	USB 2.0 Type 1 port (factory option)
ETHERNET (1 – 4) Connector Color: Yellow	Four RJ-45 Ethernet ports connect to the Ethernet port on your PC or your home network
CABLE Connector Color: White	F-connector connects to an active cable signal from your service provider
RESET	Resets the cable modem
WIRELESS SETUP	Activates WPS, which allows you to add wireless devices to the wireless network of the residential gateway
ANTENNA (internal)	(2) internal antennas provide a communication connection for the built-in 802.11n wireless

Product Specifications

Table 3. Product Specifications

Specification	Value
Residential Gateway	
ICSA (Independent Computer Security Association) Firewall Compliant	• IP Address and Port Number • TCP flags, ICMP types, fragmentation • Connection Creation and Teardown • Timestamps • Payload Modification
Parental Controls	• Content Filtering with Per-User Policies • Domain Block/Deny • Keyword Blocking • Java X Applet Blocking • Per-User MAC Address Filtering
Advanced Event Logging	• Filtering Activity • Session Tracking • User Notification via E-mail Alert and SNMP Traps
DOS attack protection	• Replay Attack Protection • Malformed Packet Protection • SYN Flooding • TCP Hijacking • LAND Attack • WinNuke/OOBNuke (Invalid TCP urgent pointer) • Christmas Tree • SYN/FIN (jackal) • BackOffice (UDP 32337) • NetBus • Smurf • Tear Drop • ICMP Flowding • Ping of Death • TCP Port Probe • UDP Port Probe • New Tear • Nestea • SYNdrop • Jolt • Boink • Bonk
Routing Features	• NAPT, NAT, and Pass-through (layer 2) Operational Modes • RIP v1/v2 • Static Routes • Port Forwarding • Port Triggering • UPnP IGD 1.0, QoS 1.0

Specification	Value
Residential Gateway (continued)	
ALG Support	• FTP • Real Audio • H.323 • ICQ • IPSec Pass-through • L2TP Pass-through • PPTP Pass-through • TFTP • mIRC • PIRCH • MS NetMeeting • Net2phone • AOL and MSN Messenger • Yahoo Messenger • Go2Call • Hotline Server • Visual IRC • CuSeeme • AT&T Instant Messenger Anywhere • Active Worlds • Buddy Phone Calista IP Phone • Delta Three PC to Phone • Dial Pad • Dwyco Video Conferencing • OrbitRC • Xircon • Netscape Chat
Wireless Access Point	
802.11n	• 2x2 2.4 GHz or 2x2 Dual Band 2.4/5 GHz wireless access point • (2) Internal Antennas • Wi-Fi Compliant • Wi-Fi Security (WPA2, WPA2-PSK, WPA, WPA-PSK, WEP) • WMM-QoS (Wireless Multi Media - Quality of Service) • WMM Power Save • WPS • Wireless Bridging - WDS (Wireless Distribution System) – allows connection to “Range Extender Products” • RADIUS Authentication (Client, EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-MD5) • MBSSID (4 SSIDs with unique NAT scopes) • Wi-Fi "Hot Spot" support (Static DHCP IP Scope over tunnel)
RF Downstream	
Operating Frequency Range	88 to 1002 MHz
Tuner Frequency Range	88 to 1002 MHz
Tuner	(2) Frequency agile block tuners, 32 MHz bandpass each
Demodulation	8 demodulators, 4 per tuner, each demodulator; 64 QAM or 256 QAM
Maximum Data Rate	8 downstream channels, each 6 MHz channel: 42.88 Mbps for 256 QAM and 30.34 Mbps for 64 QAM
Bandwidth	6 or 8 MHz
Operating Level Range	-15 to +15 dBmV
Input Impedance	75 ohms

Specification	Value
RF Upstream	
Operating Frequency Range	5 to 42 MHz, 5 to 65 MHz or 5 to 85 MHz
Transmitter Frequency Range	5 to 42 MHz, 5 to 65 MHz or 5 to 85 MHz
Upstream Transmission	4 upstream channels
Modulation	QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM / ATDMA, 128 QAM / SCDMA
Maximum Data Rate per channel	Modulation / Channel Bandwidth (MHz) / Raw Data Rate (Mbps) QPSK 1.6 2.56 16 QAM 1.6 5.12 QPSK 3.2 5.12 16 QAM 3.2 10.2 32 QAM 3.2 12.8 64 QAM 3.2 15.4 16 QAM 6.4 20.5 32 QAM 6.4 25.6 64 QAM 6.4 30.7
Bandwidth	200 kHz to 6.4 MHz
Maximum Operating Level	Modulation / One Channel / 2 Channels / 3 or 4 Channels TDMA QPSK +61 dBmV +58 dBmV +55 dBmV 8 QAM +58 dBmV +55 dBmV +52 dBmV 16 QAM +58 dBmV +55 dBmV +52 dBmV 32 QAM +57 dBmV +54 dBmV +51 dBmV 64 QAM +57 dBmV +54 dBmV +51 dBmV SCDMA QPSK +56 dBmV +53 dBmV +53 dBmV 8 QAM +56 dBmV +53 dBmV +53 dBmV 16 QAM +56 dBmV +53 dBmV +53 dBmV 32 QAM +56 dBmV +53 dBmV +53 dBmV 64 QAM +56 dBmV +53 dBmV +53 dBmV 128 QAM +56 dBmV +53 dBmV +53 dBmV
Electrical	
Input Voltage	15 VDC
Power Consumption (DC, in modem module)	~12 Watts Online
Data Ports	1000/100/10BASE-T (Auto-negotiate with Auto-MDIX): RJ-45 Ethernet (4) USB 2.0: USB Type 1 (1)
RF	Female F-Type
Output Impedance	75 ohms
Mechanical	
Dimensions (W x D x H)	F-Type connector included: 5.6 in. x 7.3 in. x 1.9 in. (14.5 cm x 18.6 cm x 5 cm) F-Type connector not included: 5.6 in. x 6.9 in. x 1.9 in. (14.5 cm x 17.6 cm x 5 cm)
Weight	13.7 oz. (0.390 kg)
Operating Temperature	32˚ to 104˚F (-0˚ to 40˚C)
Operating Humidity	0 to 95% RH non-condensing
Storage Temperature	-4˚ to 158˚F (-20˚ to 70˚C)

Specification	Value
Standards and Approvals	
Designed to meet with the following standards	DOCSIS 3.0, 2.0, 1.1, and 1.0 IEEE 802.11n WEP, WPA, and WPA2 WMM, WPS
Regulatory Compliance	
Regulatory and Safety Approvals	As required per country where the DPC3825 will be used

Ordering Information

Table 4. Ordering Information

Description	Part Number
DPC3825 DOCSIS 3.0 8x4 Wireless Residential Gateway includes: • 100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply • 5-42/88-1002 MHz diplex filter (DOCSIS) • USB 2.0 port • Ethernet cable • CD-ROM containing user guide ***North America***	4034138
DPC3825 DOCSIS 3.0 8x4 Wireless Residential Gateway includes: • 100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply • 5-65/88-1002 MHz diplex filter (DOCSIS) • USB 2.0 port • Ethernet cable • CD-ROM containing user guide and USB driver Customer Specific Configuration ***Japan***	4034139
DPC3825 DOCSIS 3.0 8x4 Wireless Residential Gateway includes: • 100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply • 5-65/88-1002 MHz diplex filter (DOCSIS) • USB 2.0 port • Ethernet cable • CD-ROM containing user guide and USB driver Customer Specific Configuration ***Japan***	4034140

Replacement Components

Table 5. Replacement Components

Description	Part Number
Power Supplies	
Class 2 Switching-Regulated	
100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply, non-polarized	4034524
Power Cords	
Power Cord, North America	1002239
Power Cord, Japan	207586
CD-ROM	
CD-ROM with User Guide	4034136

Cisco, Cisco Systems, the Cisco logo, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.
DOCSIS is a registered trademark of Cable Television Laboratories, Inc.

All other trademarks mentioned in this document are the property of their respective owners.
Specifications and product availability are subject to change without notice.
© 2009 Cisco Systems, Inc. All rights reserved.

Cisco Systems, Inc.
1-800-722-2009 or 678-277-1120
www.cisco.com

Part Number 7018331 Rev A
November 2009